Цифровые мультиметры HMC8012

Архангельск (8182)63-90-72
Астана (7172)727-132
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Тверь (4822)63-31-35
Томск (3822)98-41-53
Тула (4872)74-02-29
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Ярославль (4852)69-52-93

Киргизия (996)312-96-26-47
Россия (495)268-04-70
Казахстан (772)734-952-31

https://rohdeschwarz.nt-rt.ru || rwz@nt-rt.ru

Digital Multimeter
HMC8012

HMC8012 - rear view of GPIB-version

HZC95
19" rackmount kit 2RU

HZ15 (included)
Silicon test lead with safety connector and probe

- ☑ 5¾-Digit Display (480,000 Counts)
- ☑ Simultaneous Display of 3 Measurements, e.g. DC + AC + Statistics
- ☑ Up to 200 Measurements per Second
- ☑ DC Basic Accuracy 0,015%
- ☑ 12 Measurements Functions: DCV, DCI, True RMS, ACV and ACI, Frequency, 2- and 4-Wire Resistance, Capacitance, Continuity, Diode Test, Temperature, Power
- ☑ Crisp color TFT display for excellent readability
- ☑ Resolution: 1µV, 100nA, 1mΩ, 1pF, 1Hz, 0,1°C
- ☑ True RMS Measurement AC, AD + DC
- ☑ Mathematic Functions: Limit Testing, Minimum/Maximum, Average, Offset, DC Power, dB, dBm
- ☑ Temperature Measurements with Platinum Sensors (PT100/PT500/PT1000)
- ☑ Data Logging in .CSV-Format to Internal Memory or USB-Stick
- ☑ Interfaces: USB-TMC and Ethernet (LXI in Preparation), optional IEEE-488 (GPIB)
- ☑ SCPI commands widely compatible with Agilent 34410A

Digital Multimeter HMC8012

All data valid at 23°C ±5K after 90 minutes warm-up and with 5¾ digits.

DC Specifications DC Accuracy in ± (% of reading + % of range):

Function	Range[1]	Test Current Voltage drop	Input Impedance	1 Year 23 °C ±5 K	Temp. Coefficient 0-18 °C, 28-55 °C
DC Voltage	400,000 mV		10 MΩ/>10 GΩ	0,015+0,002	0,0010+0,0005
	4,00000 V		10 MΩ/>10 GΩ	0,015+0,002	0,0008+0,0003
	40,0000 V		10 MΩ	0,020+0,002	0,0010+0,0005
	400,000 V		10 MΩ	0,020+0,002	0,0015+0,0005
	1000,00 V		10 MΩ	0,025+0,002	0,0015+0,0005
Resistance	400,000 Ω	1 mA		0,050+0,005	0,0020+0,0005
(2/4-wire)[2]	4,00000 kΩ	1 mA		0,015+0,002	0,0020+0,0002
	40,0000 kΩ	100 µA		0,015+0,002	0,0020+0,0002
	400,000 kΩ	10 µA		0,030+0,003	0,0020+0,0002
	4,00000 MΩ	1 µA		0,060+0,005	0,0020+0,0002
	40,0000 MΩ	100 nA		0,250+0,003	0,0080+0,0005
	250,000 MΩ	460 nA || 10 MΩ (parallel)		2,000+0,010	0,200+0,0005
DC Current[4]	20,0000 mA	<0,30 V		0,05+0,010	0,008+0,0010
	200,000 mA	<0,27 V		0,05+0,010	0,008+0,0010
	2,00000 A	<0,2 V		0,25+0,070	0,012+0,0015
	10,0000 A[3]	<0,60 V		0,25+0,070	0,010+0,0010
Continuity	4000 Ω	1 mA		0,05+0,010	0,005+0,0005
Diode Test	5 V	1 mA		0,05+0,010	0,005+0,0005

Notes:
1) 240.000 / 480.000 counts exept in 1000 V and 10 A range
2) Specifications are for 4-wire measurement; 2-wire measurement using NULL function.
3) Maximum current load at >5 A is 30 seconds, followed by a pause of >30 seconds
4) At 250 V maximum

AC Specifications AC Accuracy in ± (% of reading + % of range):

Function	Range[1]	Frequency	1 Year 23 °C ±5 K	Temp. Coefficient 0-18 °C, 28-55 °C
AC Voltage[2]	400,000 mV	10 Hz–20 Hz	3,0+0,05	0,01+0,01
	4,00000 V	20 Hz–45 Hz	1,5+0,05	0,01+0,01
	40,0000 V	45 Hz–20 kHz	0,3+0,05	0,01+0,01
	400,000 V	20 kHz–50 kHz	1,0+0,05	0,02+0,01
	750,00 V[6]	50 kHz–100 kHz	3,0+0,05	0,05+0,01
AC Current[5]	20,0000 mA	20 Hz–40 Hz	1,5+0,05	0,01+0,01
	200,000 mA	40 Hz–1 kHz	0,5+0,05	0,01+0,01
	2,00000 A	1 kHz–5 kHz	1,5+0,05	0,01+0,01
	10,0000 A[4]	5 kHz–10 kHz[3]	2,5+0,05	0,01+0,01

Notes:
1) 240.000 / 480.000 counts exept in 750 V and 10 A range
2) Specifications are for sinusoidal curves. Input impedance is 1 MΩ parallel <100 pF
3) Except 10 A range
4) Maximum current load at >5 A is 30 seconds, followed by a pause of >30 seconds
5) At 250 V maximum
6) For ACV measurements and frequencies above 50 kHz the user is required to choose an appropriate measurement range.

Frequency Counter Specifications Frequency Accuracy in ± (% of reading):

Function	Range[1]	Frequency	1 Year 23 °C ±5 K	Temp. Coefficient 0-18 °C, 28-55 °C
AC Voltage[2]	all ranges	5 Hz–700 kHz	0,01	0,005
AC Current[2]	20 mA, 200 mA	5 Hz–10 kHz	0,01	0,005
	2 A, 10 A	5 Hz–5 kHz	0,01	0,005

Notes:
1) Display of frequency available as 2nd measurent for main functions ACV and ACI
2) Input sensitivity: >7,5 % of full scale (5 Hz-400 kHz) resp. >20 % (400-700 kHz)

Frequency Counter Resolution

Setting	Measurement time	Display range	Resolution
Slow	1 s	999,999 kHz	1 Hz
Medium	100 ms	999,99 kHz	10 Hz
Fast	10 ms	999,9 kHz	100 Hz

Capacitance Specifications	Capacitance Accuracy in ± (% of reading + % of range):		
Function	**Range**	**1 Year 23 °C ±5 K**	**Temp. Coefficient 0-18 °C, 28-55 °C**
Capacitance	5,000 nF	2,0+2,5	0,02+0,002
	50,00 nF	1,0+2,0	0,02+0,002
	500,0 nF	1,0+0,5	0,02+0,002
	5,000 µF	1,0+0,5	0,02+0,002
	50,00 µF	1,0+0,5	0,02+0,002
	500,0 µF	2,0+1,0	0,02+0,002

General Information	
Power supply:	115 V / 230 V ±10%, adjustable voltage selector on rear panel; Frequency 50Hz / 60Hz
Power consumption:	25 W max., 12 W typ.
Ambient temperature:	0 ...+55 °C (operating); –40 ...+70 °C (storage)
EMC compliance:	DIN EN 61326-1, DIN EN 55011
Safety compliance:	DIN EN 61010-1, CAN/CSA-C22.2 No. 61010-1-12
Measuring Category:	CAT II, 600 V; CAT I, 1000 V_{DC}, 750 $V_{AC\ RMS}$
Dimensions (W x H x D):	222 x 88 x 280 mm
Weight:	approx. 2.7 kg
Warm-up time:	90 minutes

All data valid at 23°C ±5K after 90 minutes warm-up and with 5 ¾ digits

Additional Specifications	
DC voltage	
Measuring Method	Sigma Delta analog/digital converter
Input Resistance	>10 GΩ (selectable for ranges 400 mV / 4 V 10 MΩ (on all ranges)
CMRR	120 dB for VCM <500 V, 1 kΩ unbalance in the LO-line and 5 measurements/second
SMRR	>60 dB for 50 or 60 Hz ±0,1% and 5 measurements/second
Input current	60 pA for 25 °C
Overload protection	1000 V for all ranges
AC voltage	
Measuring Method	AC coupled True RMS measurement
Input Resistance	1 MΩ parallel <100 pF (on all ranges)
Crest Factor	Max. 10 (0,5% additional measurement uncertainty)
CMRR	>60 dB 1 kΩ in the LO-line and frequency <60 Hz
Overload protection	750 V_{rms} (for all ranges)
AC current / DC current	
Shunt Resistance	13,75 Ω for 20 mA; 1,25 Ω for 200 mA; 25 mΩ for 2A, 10A
Overload protection	Fuse: F10H250V on the front panel
Resistance	
Measuring Method	2-wire and 4-wire
Overload protection	1000 V for all ranges
Continuity	
Measuring Method	1 mA constant current
Threshold value	Adjustable in 1Ω steps
Response Time	200 measurements/second
Overload protection	1000 V
Diode Test	
Measuring Method	1 mA constant current
Threshold value	Adjustable in 10 mV steps
Response time	10 measurements/second
Overload protection	1000 V
Temperature	
Measurement method	Resistance measurement with platinum sensor
Sensor types	PT100, PT500, PT1000
Connection	2-wire, 4-wire
Overload protection	1000 V
Math Functions	
Statistics	Min/Max/Average/Standard deviation
Relative measurement	NULL key, offset via keyboard
Logarithmic functions	dB: Reference level via keyboard or NULL key dBm: Reference impedance 50/75/600Ω or freely selectable
Data logging	
Number of measuring counts	Internal: 50,000; external: defined by USB stick capacity.
Rate Log	Min.: 5 ms typ. (in accordance to measuring function and resolution) Max: 3.600 s
Duration Log	Internal: 250 s...50.000 h; external: defined by USB stick capacity
Data Log	Main, 2nd, Time-Stamp
Interfaces	USB 2.0 (TMC and CDC/VCP), Ethernet 10/100 (LXI in Preparation), IEEE-488/GPIB optional
Programming	SCPI, compatible with Agilent 34401A and 34410A

Reading Rates				
Function	**Setting**	**Resolution**	**Display**	**Reading Rates (per sec.)**
AC Voltage	Slow	5 3/4	400,000	5
	Medium	4 3/4	40,000	10
	Fast	4 3/4	40,000	200
DC Voltage	Slow	5 3/4	400,000	5
	Medium	4 3/4	40,000	10
	Fast	4 3/4	40,000	200
AC Current	Slow	5 3/4	200,000	5
	Medium	4 3/4	20,000	10
	Fast	4 3/4	20,000	200
DC Current	Slow	5 3/4	200,000	5
	Medium	4 3/4	20,000	10
	Fast	4 3/4	20,000	200
Resistance (2-wire)	Slow	5 3/4	400,000	5
	Medium	4 3/4	40,000	10
	Fast	4 3/4	40,000	50
Resistance (4-wire)	Slow	5 3/4	400,000	5
	Medium	4 3/4	40,000	10
	Fast	4 3/4	40,000	25
Frequency	Slow	6	999,999	1
	Medium	5	99,999	10
	Fast	4	9,999	100
Diode		4 3/4	40,000	10
Continuity		4 3/4	40,000	200
Temperature		4	999,9	10

Accessories supplied: Line cord, printed operating manual, HZ15 Silicon test lead with safety connector and test probe, 1m (black + red), Software-CD

Recommended accessories:

HZ812	PT100 Temperature probe 2-wire
HZ887	PT100 Temperature probe 4-wire
HZC95	19" rackmount kit 2RU for HMC series

Your benefit	Features
See more at a glance with three values displayed on one screen	Measured voltage, measured current, calculated power
Limit testing on color display for easy minimum/maximum analysis	Programmable test functions such as limit, min./max., etc.
10 A range as standard	One current input with up to 10 A and no need to change connectors for different ranges
Saves up to 4 GB of data directly onto storage devices	Writes directly to USB thumb drive

Simultaneous measurement display

Simultaneous display of three measurements, including DCI and ACI at the same time.

Ideal for industrial environments

Easily slots into R&S®HZC95 2 HU 19" rackmount kit for production environment.

Ordering information	
Base units	
without GPIB	R&S®HMC8012
with GPIB	R&S®HMC8012-G
Accessories and system component	
PT100 temperature probe, 2-wire	R&S®HZ812
PT100 temperature probe, 4-wire	R&S®HZ887
Silicone test leads (included with base unit)	R&S®HZ15
19" rackmount kit, 2 HU for HMC series	R&S®HZC95

Included accessories:
All models include R&S®HZ15 silicone test leads with safety connectors and test probe, length: 1 m (black + red), operating manual, power cable and three-year warranty.